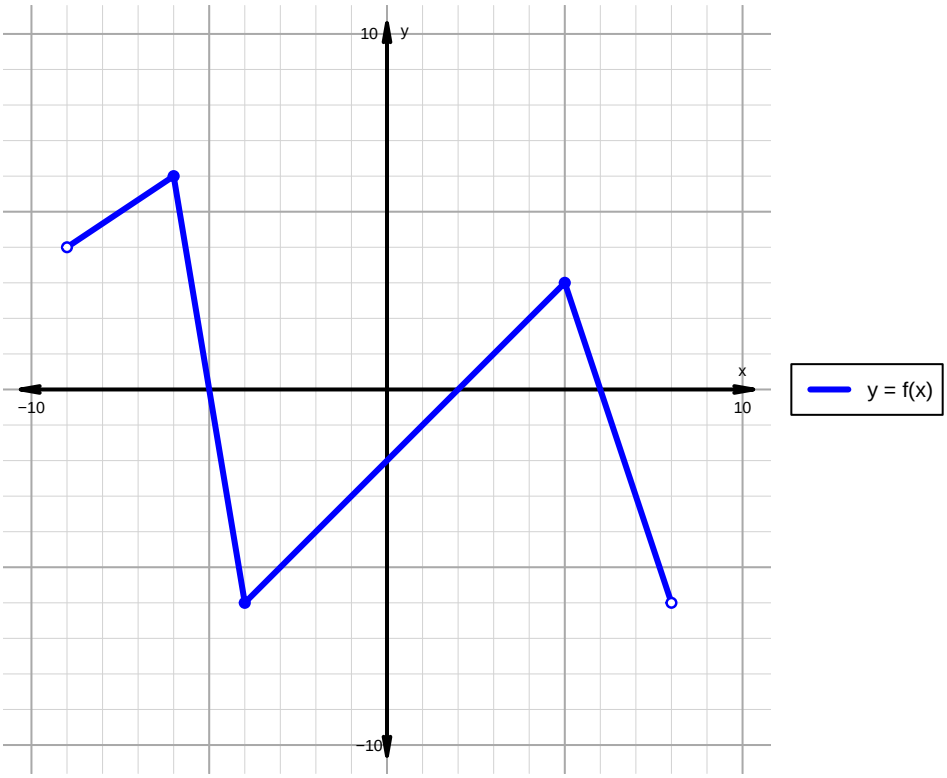
Name: Date:

Intervals, Transformations, and Slope Solution (version 107)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-5)\cup(2,6)$
Negative	$(-5,2)\cup(6,8)$
Increasing	$(-9,-6)\cup(-4,5)$
Decreasing	$(-6,-4)\cup(5,8)$
Domain	$(-9,8)$
Range	$(-6,6)$

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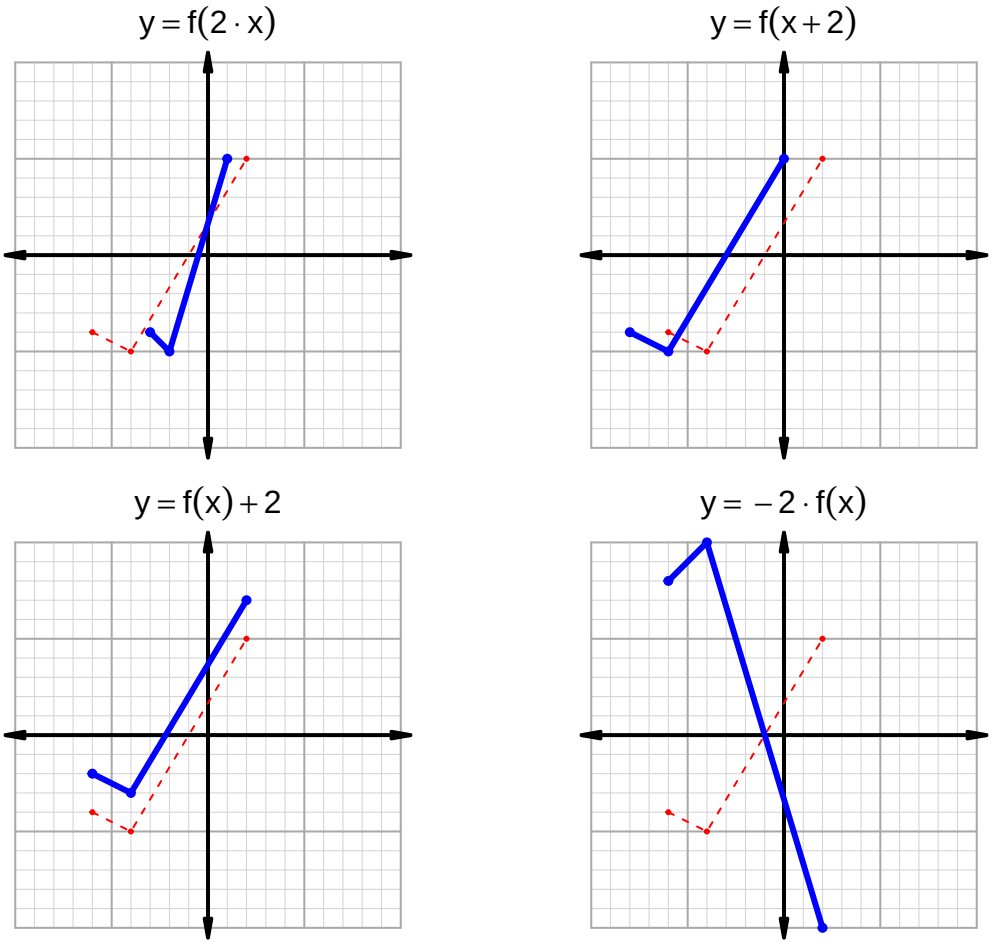
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 20$ and $x_2 = 74$. Express your answer as a reduced fraction.

x	$g(x)$
20	63
39	20
63	74
74	39

$\frac{f(74)-f(20)}{74-20} = \frac{39-63}{74-20} = \frac{-24}{54}$

The greatest common factor of -24 and 54 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-4}{9}$$